EXHIBIT 21

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12	UNITED STATES DISTRICT COURT					
13	NORTHERN DISTRICT OF CALIFORNIA					
14	SAN FRANCISCO					
15	ANIBAL RODRIGUEZ AN		Case No. 3:20	0-CV-04688		
16	MUNIZ, individually and on behalf of all other similarly situated,		DEFENDANT GOOGLE LLC'S			
17		Plaintiff,	SUPPLEME	NTAL OBJECTIONS AND S TO PLAINTIFFS'		
18	VS.		INTERROG	ATORIES, SET SIX (NOS. 12,		
19	GOOGLE LLC, et al.,		16, & 17)			
20		Defendant.	Judge:	Hon. Richard Seeborg		
21			Courtroom:	3, 17th Floor		
22			Action Filed:	July 14, 2020		
23						
24	DD ODOLDUDING DADTY.	DI AINTERE AND	DAL DODDICE	IEZ AND HILIEANNA MINIZ		
25	PROPOUNDING PARTY: PLAINTIFFS ANIBAL RODRIGUEZ AND JULIEANNA MUNIZ					
26	RESPONDING PARTY:	DEFENDANT GO	OGLE LLC			
27	SET NO.:	SIX				
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substance of their allegations in this case. They subsequently willingly engaged with the very apps they alleged were working a violation of their privacy. Plaintiff Rodriguez lacks standing because he only had his WAA control off for seven days during the proposed class period, and during those ten days, he had his GAP control turned on, which means that he could not have received any personalized advertising using WAA-off data. Further, he confirmed in testimony that he would not have changed his behavior in a but-for world because, after making his allegations in this case, he did not change any of his behavior, and instead willingly submitted to the alleged violations of privacy. And Plaintiff Harvey admitted during her deposition that she did not turn WAA on or off for any particular reason, and that she has not changed her behavior since filing this case despite the alleged violations of privacy. Finally, both Plaintiff Rodriguez and Plaintiff Harvey refused to testify when given the opportunity to do so that, if the Court rules Google's practices are lawful, they would change any of their behavior to avoid the alleged violations of privacy.

INTERROGATORY NO. 17:

Please DESCRIBE all facts concerning the revenue and profits that GOOGLE generates or receives related to the collection, storage, or use of WAA OFF DATA including for each year during the CLASS PERIOD:

- a. The amount of those revenue and profits by year and month
- b. How those revenue and profits are and have been generated;
- c. GOOGLE's total revenue and profits related to GOOGLE Analytics;
- d. What percentage of the revenue and profits reported in response to subparagraph (c) were generated based on WAA OFF DATA;
 - e. Google's total revenue and profits related to AdMob;
- f. What percentage of the revenue and profits reported in response to subparagraph (e) were generated based on WAA OFF DATA;

- g. How said revenue and profits are and have been accounted for within or attributed to the profit and costs centers of GOOGLE, specifying any GOOGLE products, services, teams, and accounting units;
- h. The amount of said revenue and profits attributed to the profit and costs centers of GOOGLE, specifying any GOOGLE products, services, teams, and accounting units, described by year and month; and
- i. The amount of those revenues broken down by region, including for the United States and California
- j. An IDENTIFICATION of all documents relied on in responding to this Interrogatory. **RESPONSE TO INTERROGATORY NO. 17:**

Google objects to this Interrogatory as compound. Google objects to this Interrogatory as vague and ambiguous as to several undefined terms and phrases susceptible to multiple meanings. For purposes of this response, Google construes "Google" to mean Google LLC and "WAA" to mean the account-level setting called Web & App Activity. Google additionally objects to this Interrogatory as vague, ambiguous, and confusing as to the use of THE undefined phrases "generates or receives," "collection, storage, or use," "generated," "accounted for within," "attributed to," "profit and costs center," and "relied on."

Google further objects to this Interrogatory as overbroad, unduly burdensome, and abusive to the extent it seeks revenue and profits, without limitation to revenue attributed to data sent to Google by third-party app developers after collection, if any, through GA for Firebase, Cloud Messaging, or AdMob—i.e. concerning Plaintiff's theory of wrongdoing in the Third Amended Complaint.

Google further objects to this Interrogatory as overbroad and unduly burdensome to the extent Google does not track its revenues or profits as connected to the collection, storage, or use of "WAA OFF DATA," as defined by Plaintiffs. Google also objects to this Interrogatory as overbroad and unduly burdensome to the extent Google does not track revenues or profits for Google Analytics or AdMob.

Google further objects to this Interrogatory to the extent that it seeks information protected by the attorney-client privilege and/or the attorney work product doctrine.

SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 17:

Subject to and without waiving the foregoing, Google responds further as follows:

Google Analytics for Firebase (GA4F) app measurement data does not directly generate revenue for Google. The product itself operates at a significant net loss. However, GA4F helps Google's revenue-generating functions because it leads to a "virtuous cycle" in the parlance of the GA4F team that helps developers make their apps perform better, which in turn leads to increased user engagement, which in turn leads to app developers investing more in their apps and into advertising their apps.

There are also advertising functions supported by GA4F more directly, though its principal function in this support role is to maintain the trust of app developers and advertisers in the monitoring tools they use and the ad targeting functions and conversion tracking functions they seek.

Where advertising is discussed below, it is in reference to App Campaigns, which are ad campaigns advertisers who have GA4F enabled in their apps will run to drive installs or reengagement with their apps. See https://support.google.com/google-ads/topic/10011871?hl=en&ref topic=10287124,3181080,3126923. Further, Google interprets this interrogatory to exclude signed-out users.

First, when a user has sWAA on, as well as GAP, and does not have LAT or OOOAP enabled, and the developer has enabled Google Signals and linked their GA4F property to Google Ads, and the user is considered neither a Unicorn (under 13) or a Dasher account (enterprise), app measurement data from GA4F can be written to a GAIA-tied user store at Google called which can subsequently be used for interest-based advertising, depending on the user's privacy settings at the time of ad serving (i.e., if they have GAP on and have not enabled LAT or OOOAP). Google understands this revenue stream to be outside the scope of this case, because it depends on the user having sWAA on at the time the app measurement data was generated.

Google does not use app measurement data generated while a user is signed in and has sWAA off (which is necessarily off when WAA is off) for personalized advertising (i.e., interest-based advertising).

Second, when a GA4F developer has linked their Analytics property to a Google Ads account, that enables conversion tracking under appropriate circumstances. See, e.g., https://support.google.com/google-ads/answer/1722054. On Android, GA4F conversions are registered using the pseudonymous identifier ADID; they could also be registered using GAIA if the user has sWAA turned on as well as other privacy settings configured properly (GAP on, NAC on, LAT off) and if the developer has enabled Google Signals. On iOS, GA4F registers conversions using the pseudonymous identifier IDFA. If the iOS IDFA is zeroed out because the user has enabled LAT or clicked "Don't Allow" on the App Tracking Transparency prompt, GA4F would be unable to directly associate app-install conversions with ad impressions and clicks which drove them. Regardless, no data in this scenario would be written to or used for personalized advertising. App developers can also use third parties to track conversions, such as AppsFlyer and Kochava. See https://support.google.com/google-ads/answer/9260620?hl=en&ref topic=11069497.

Separately, ad interactions with Google-served ads are recorded by the appropriate ad stack using pseudonymous identifiers such as device ID and ad event id when available.

In a process called attribution, Google serves as an accountant for the app developer/advertiser, determining if the ad interaction and the conversion recorded by GA4F or by a third party SDK were made by the same device or user so the developer/advertiser can measure the effectiveness of the ad campaign. *See id.* (discussing how to track conversions with Firebase and third-party providers such as AppsFlyer and Kochava).

Google tracks app campaign ad spend that is bid against different types of conversions. As of last month, approximately 55% of app campaign ad revenue was attributable to conversion types bid against GA4F (as opposed to other sources of conversions). Before which launched in approximately 1H 2019, this percentage was significantly lower–approximately 6% or

less. By October 31, 2019, this percentage was 10.6%. By October 21, 2020, it was 29.4%. By October 1, 2021, it was 49.4%. By October 1, 2022, it was 54.9%.

To pinpoint the proportion of attributed GA4F conversion events that are triggered when the user making the conversion has sWAA turned off during the class period is virtually if not actually impossible. Google has identified no method to do this. However, Plaintiffs have requested that Google provide estimates of how much GA4F traffic in general is "WAA-off traffic." This is likewise not possible to tell with historical data because WAA status is not logged alongside pseudonymous GA4F app measurement data. Plaintiffs also requested other indicators of how much internet traffic is WAA-off traffic. To that end, Google identified a log called sampledAdEventsQueries that indicates WAA and sWAA status alongside ad interactions, e.g., views and clicks, on App Campaigns designated app-install campaigns. Google queried this data source, which maintains ad interaction information with varying degrees of reliability, going back to the launch of GA4F, for the WAA opt-out rates on 25 random days over the last five years. These are the results of that query:

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Date	WAA Opt-out Rate on Google Search Advertising Stack	WAA Opt-out Rate on Google Display Advertising Stack	WAA Opt-out Rate on YouTube Advertising Stack
2016-04-18	13.73%	null	nul
2016-05-16	13.28%	null	nu
2016-08-31	12.94%	null	nu
2016-09-24	11.87%	null	nu
2016-10-30	100.00%	null	nu
2017-04-13	5.58%	null	nu
2017-05-26	5.59%	null	nu
2017-07-31	5.56%	null	nu
2017-08-03	5.55%	null	nu
2017-12-16	4.48%	null	nu
2018-01-06	4.45%	null	nu
2018-03-16	4.30%	null	nu

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	ACi WAA Opt-out (S	ampledAdEventsQueries) – l	(mpressions
Date	WAA Opt-out Rate on Google Search Advertising Stack	WAA Opt-out Rate on Google Display Advertising Stack	WAA Opt-out Rate on YouTube Advertising Stack
2018-08-13	4.25%	null	null
2018-09-15	4.20%	null	null
2018-12-27	3.67%	null	null
2019-02-01	3.42%	null	null
2019-05-12	4.62%	null	null
2019-10-06	4.43%	null	null
2019-11-11	4.71%	null	null
2019-12-01	4.20%	null	null
2020-03-03	9.04%	null	null
2020-07-30	14.25%	null	null
2020-08-13	14.60%	null	null
2020-11-30	null	null	null
2020-12-13	null	null	null
2021-01-07	null	null	null
2021-02-17	null	null	null
2021-05-19	null	null	null
2021-09-19	null	null	null
2021-10-03	null	null	null
2022-03-15	null	1.63%	1.36%
2022-04-21	null	1.60%	2.65%
2022-05-11	null	1.57%	2.62%

	ACi WAA Opt-ou	t (SampledAdEventsQueries)	– Clicks
Date	WAA Opt-out Rate on Google Search Advertising Stack	WAA Opt-out Rate on Google Display Advertising Stack	WAA Opt-out Rate on YouTube Advertising Stack
2019-05-12	3.91%	null	nul
2019-10-06	3.44%	null	nu
2019-11-11	4.11%	null	nu
2019-12-01	3.42%	null	nu
2020-03-03	6.05%	null	nu
2020-07-30	10.23%	null	nu
2020-08-13	9.55%	null	nu
2020-11-30	null	null	nu
2020-12-13	null	null	nu
2021-01-07	null	null	nu
2021-02-17	null	null	nu
2021-05-19	null	null	nu
2021-09-19	null	null	nu
2021-10-03	null	null	nu
2022-03-15	null	0.73%	0.479
2022-04-21	null	0.64%	0.989
2022-05-11	null	0.66%	1.149

	HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY		
1	Finally, Google's overall App Campaign profit and loss statements were produced at		
2	GOOG-RDGZ-00184247 (2017-2020) and GOOG-RDGZ-00185744 (2021). Google's operating		
3	profit for App Promo ads for years 2017-2021 was as follows:		
4	• 2017: \$94 Million		
5	• 2018: \$207 Million		
6	• 2019: \$310 Million		
7	• 2020: \$521 Million		
8	• 2021: \$1,134 Million		
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11			
12	Dated: November 1, 2022 WILLKIE FARR & GALLAGHER LLP		
13	By: /s/ Eduardo E. Santacana		
14	Eduardo E. Santacana		
15	Attorneys for Defendant Google LLC		
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20	GOOGLE LLC'S SUPPLEMENTAL OBJECTIONS AND RESPONSES		